CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.06/KRIDL/CSR-11/200e/CEMENT/2016-17 Date: 25.11.2016

TEST REPORT ON CEMENT

* Customer	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer**, KRIDL, Bangalore.
* Name of Work	:	Improvements to Roads and Drains at Saraipalya and surrounding areas in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Cement
Sample Received on	:	22.11.2016
Period of Testing	:	22.11.2016 to 25.11.2016

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	30.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	155 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	475 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

Civil-Tech Consultants & Engineers Bangalore

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VIDYARANI P.K.
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T-2377

Job No.: CTCE/BBMP/W.No.06/KRIDL/CSR-11/200e/SAND-Gradation/2016-17 25.11.2016

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	: **Executive Engineer,** KRIDL, Bangalore.
* Name of Work	: Improvements to Roads and Drains at Saraipalya and surrounding areas in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	: Fine Aggregates
Technical Reference	: IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	: 22.11.2016
Date of Testing	: 25.11.2016

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	96.40	90-100	90-100	90-100	95-100
2.36	80.90	60-95	75-100	85-100	95-100
1.18	57.40	30-70	55-90	75-100	90-100
600 Micron	21.80	15-34	35-59	60-79	80-100
300 Micron	12.60	5-20	8-30	12-40	15-50
150 Micron	6.80	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.06/KRIDL/CSR-11/200e/AGG/GR/2016-17 25.11.2016

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of Work	:	Improvements to Roads and Drains at Saraipalya and surrounding areas in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Coarse Aggregates (40mm)
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2016)
Sample Received on	:	22.11.2016
Date of Testing	:	25.11.2016

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2016)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	98.00	95-100	85-100
20	36.96	30-70	0-20
10	16.96	10-35	0-5
4.75	3.26	0-5	-

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Remarks : This sample is under graded specific limits.

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Job No.: CTCE/BBMP/W.No.06/KRIDL/CSR-11/200e/Cube/2016-17 07.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of the work	:	Improvements to Roads and Drains at Saraipalya and surrounding areas in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	07.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.01.2017	07.02.2017	8.185	480.3	21.35
2	10.01.2017	07.02.2017	8.268	506.3	22.50
3	10.01.2017	07.02.2017	8.389	526.6	23.40

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
*** Agency**	:	**Executive Engineer,** KRIDL, Bangalore.
*** Name of the work**	:	Improvements to Roads and Drains at Saraipalya and surrounding areas in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
*** Reference**	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
*** Sample ID**	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	07.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.01.2017	07.02.2017	8.135	485.5	21.58
2	10.01.2017	07.02.2017	8.298	490.2	21.79
3	10.01.2017	07.02.2017	8.335	513.2	22.81

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* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	07.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.01.2017	07.02.2017	8.198	515.5	22.91
2	10.01.2017	07.02.2017	8.247	536.6	23.85
3	10.01.2017	07.02.2017	8.380	542.2	24.10

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* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
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* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	14.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.01.2017	14.02.2017	8.165	502.2	22.32
2	17.01.2017	14.02.2017	8.299	513.6	22.83
3	17.01.2017	14.02.2017	8.372	520.7	23.14

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* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	14.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.01.2017	14.02.2017	8.217	503.5	22.38
2	17.01.2017	14.02.2017	8.273	516.8	22.97
3	17.01.2017	14.02.2017	8.335	534.8	23.77

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* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	14.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.01.2017	14.02.2017	8.155	493.5	21.93
2	17.01.2017	14.02.2017	8.282	510.2	22.68
3	17.01.2017	14.02.2017	8.368	529.8	23.55

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Job No.: CTCE/BBMP/W.No.06/KRIDL/CSR-11/200e/Cube/2016-17 22.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of the work	:	Improvements to Roads and Drains at Saraipalya and surrounding areas in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	22.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.01.2017	22.02.2017	8.130	478.3	21.26
2	25.01.2017	22.02.2017	8.229	493.5	21.93
3	25.01.2017	22.02.2017	8.307	505.5	22.47

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* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
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* Reference	:	BBMP/EE/BTP/WO/145/2016-17 Dated: 09.11.2016
* Sample ID	:	Pavement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{20}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	22.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	25.01.2017	22.02.2017	8.255	480.3	21.35
2	25.01.2017	22.02.2017	8.309	493.5	21.93
3	25.01.2017	22.02.2017	8.407	510.4	22.68

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